

Time (sec)	Vehicle speed (MPH)	Engine RPM (RPM)	Engine coolant temperature (°F)	Short term fuel % trim - Bank 1 (%)	Long term fuel % trim - Bank 1 (%)	O2 sensor lambda (Bank 1 Sensor 1)	Fuel/Air commanded equivalence ratio	O2 sensor voltage wide range (Bank 1 Sensor 1) (V)	O2 voltage (Bank 1 Sensor 2) (V)	Catalyst temperature (Bank 1 Sensor 1) (°F)	Catalyst temperature (Bank 1 Sensor 2) (°F)
10.007	0	1198	152.6	0.781	0	1.001	0.995	3.348	0.78	679.1	312.8
20.002	0	1202	156.2	0.781	0	0.997	0.995	3.329	0.78	711.5	336.7
30.002	0	1231	158	4.688	-1.563	0.991	0.996	3.292	0.78	706.6	352.6
40.004	0	325	159.8	0	-1.563	1.016	0.999	3.394	0.8	730.4	367.5
50.003	6.835083	1280	163.4	0	0	0.999	0.993	3.348	0.835	753.8	379
60.003	7.456454	1194	167	1.563	0	1.001	0.993	3.363	0.8	788.5	397.4
70.003	8.077826	1305	168.8	-0.781	-0.781	0.99	0.996	3.298	0.76	821.3	415.4
80.003	8.699197	1290	172.4	0	0	0.988	0.993	3.291	0.8	841.5	434.1
90.003	9.320568	1290	176	0.781	-0.781	1.001	0.997	3.34	0.8	861.6	451
100.003	9.320568	1323	177.8	-1.563	-0.781	1.005	0.998	3.382	0.74	879.3	468.3
110.004	7.456454	114	177.8	0	-0.781	0.986	0.999	3.241	0.445	877.5	482.5
120.003	0	0	176	0	-0.781	0.961	0.999	3.1	0.445	868.6	489
130.003	0	0	176	0	-0.781	0.972	0.999	3.169	0.33	858.7	491.9
140.003	0	0	176	0	-0.781	0.98	0.999	3.208	0.195	849.9	492.3
150.003	0	0	176	0	-0.781	0.984	0.999	3.235	0.175	840.7	491.7
160.003	0	0	172.4	0	-0.781	0.987	0.999	3.252	0.175	832.5	490.6
170.003	0	0	172.4	0	-0.781	0.989	0.999	3.264	0.175	823.3	489
180.006	0	0	172.4	0	-0.781	0.99	0.999	3.272	0.175	815.2	487.2
190.004	7.456454	1189	176	-7.031	-0.781	0.926	0.994	2.845	0.895	835.3	487.4
200.004	11.18468	1305	176	0.781	0	0.994	0.993	3.326	0.8	869.2	496.4
210.004	9.320568	0	177.8	0	-0.781	0.927	0.999	2.834	0.78	885.9	510.3
220.004	8.699197	1292	181.4	0.781	0	0.991	0.993	3.293	0.82	889.3	518
230.004	7.456454	1293	181.4	-1.563	-0.781	1.001	0.999	3.341	0.78	903.6	529
240.004	3.728227	0	183.2	0	-0.781	0.973	0.999	3.17	0.8	904.5	537.4
250.005	0	1412	183.2	0	-0.781	0.863	0.771	2.404	0.075	894.4	541.9
260.004	2.485485	0	185	0	-0.781	0.989	0.999	3.265	0.8	905	548.1
270.004	13.04879	2005	185	-1.563	2.344	0.994	0.993	3.307	0.78	949.6	556.3
280.004	22.36936	1704	186.8	-0.781	0.781	0.993	0.993	3.296	0.72	1010	581.4
290.004	22.99073	159.3	186.8	0	-0.781	0.985	0.999	3.243	0.72	1012	602.1
300.004	11.18468	0	186.8	0	-0.781	0.969	0.999	3.152	0.585	998.4	614.3
310.004	27.34033	2372	185	-1.563	3.125	0.993	0.993	3.308	0.72	1053	626.4

Average	
Short term fuel % trim - Bank 1 (%)	-0.24 x >0 = Rich x <0 = Lean
Long term fuel % trim - Bank 1 (%)	0.5748
O2 sensor lambda (Bank 1 Sensor 1)	0.9888 x < 1.0 rich x > 1.0 lean
Fuel/Air commanded equivalence ratio	0.9893 Lean Rich

Note
 # StartTime = 06/27/2024 03:21:05.2212 PM
 SAE PIDs

Average	
O2 sensor voltage wide range (Bank 1 Sensor 1) (V)	3.25435
O2 voltage (Bank 1 Sensor 2) (V)	0.56157
A/F sensor (upstream)	> 3.0 V Rich <3.35 Lean
O2 sensor (downstream)	> 0.4 V Lean <.55 V Rich

320.005	28.58307	0	185	0	-0.781	0.977	0.999	3.193	0.425	1065	651.2
330.004	21.12662	0	185	0	-0.781	0.983	0.999	3.227	0.195	1051	662
340.004	16.15565	1990	186.8	0	2.344	0.988	0.993	3.274	0.82	1053	667.4
350.006	34.79679	1522	185	-3.906	0.781	0.987	0.993	3.27	0.66	1106	683.1
360.004	36.03953	1371	186.8	1.563	0	0.993	0.993	3.28	0.445	1093	700.9
370.005	38.52501	1469	185	0.781	0	1.007	0.993	3.38	0.78	1082	710.8
380.005	39.14639	1500	185	0.781	0	0.991	0.993	3.293	0.66	1080	717.8
390.005	39.14639	971	185	0	-0.781	1.232	0.854	4.835	0.68	1059	722.1
400.005	39.14639	1315	185	0.781	0	0.995	0.993	3.318	0.8	1054	723.6
410.005	39.14639	1364	185	1.563	0	0.996	0.993	3.311	0.74	1041	723.7
420.005	39.14639	1477	185	-0.781	0	0.987	0.993	3.271	0.64	1039	723.9
430.005	34.17542	0	185	0	-0.781	0.991	0.999	3.274	0.505	1023	722.8
440.005	8.077826	0	185	0	-0.781	0.991	0.999	3.275	0.31	1010	721
450.005	0	0	186.8	0	-0.781	0.994	0.999	3.303	0.195	998.6	718.9
460.007	0	0	186.8	0	-0.781	0.996	0.999	3.302	0.175	988.5	716.4
470.005	13.04879	1973	190.4	0.781	2.344	0.992	0.993	3.292	0.82	1003	714.6
480.005	37.28227	2341	185	0.781	3.125	0.992	0.993	3.259	0.445	1116	731.5
490.005	42.87461	1841	185	1.563	0.781	0.992	0.993	3.265	0.485	1164	767.3
500.005	42.87461	1195	186.8	-1.563	-0.781	1.004	0.999	3.36	0.74	1148	789.3
510.005	24.23348	0	186.8	0	-0.781	1.232	0.999	4.997	0.505	1121	798.6
520.006	14.29154	1884	186.8	2.344	1.563	1.011	0.993	3.272	0.135	1113	801.7
530.007	35.41816	2743	185	0	3.906	0.986	0.993	3.231	0.485	1196	814.6
540.007	44.73873	1734	186.8	0	0.781	0.99	0.993	3.266	0.565	1222	844.5
550.006	42.87461	960	186.8	0	-0.781	1.002	0.999	3.353	0.505	1182	857.3
560.006	20.50525	0	186.8	0	-0.781	1.232	0.999	4.997	0.035	1159	860
570.006	24.85485	2520	186.8	-0.781	3.906	0.997	0.993	3.327	0.76	1167	860.2
580.006	29.82582	2792	185	0	3.906	0.997	0.993	3.299	0.485	1184	864
590.006	61.51575	4980	186.8	-1.563	3.906	0.995	0.993	3.279	0.425	1407	912.7
600.009	65.86535	1028	190.4	1.563	-0.781	0.85	0.999	2.184	0.39	1412	1009
610.006	65.24397	2177	186.8	2.344	2.344	0.996	0.993	3.308	0.625	1375	1052
620.007	64.6226	2428	186.8	0.781	3.125	0.992	0.993	3.283	0.66	1335	1068
630.006	64.00124	2317	186.8	0.781	3.125	0.991	0.993	3.276	0.545	1316	1070
640.006	64.6226	2313	186.8	0.781	3.125	0.988	0.993	3.26	0.585	1301	1063
650.006	64.6226	1781	186.8	1.563	0.781	0.988	0.993	3.255	0.525	1265	1051
660.007	64.00124	1895	186.8	2.344	1.563	0.99	0.993	3.269	0.545	1216	1031
670.007	64.00124	2351	185	-0.781	3.125	0.992	0.993	3.293	0.625	1232	1013
680.006	64.6226	2334	185	-0.781	3.125	0.993	0.993	3.277	0.545	1248	1003
690.007	63.37986	2405	185	-0.781	3.125	0.985	0.993	3.233	0.525	1260	996.6
700.007	64.00124	2188	185	-1.563	2.344	0.998	0.993	3.286	0.525	1273	995
710.007	64.00124	1766	186.8	0	0.781	0.993	0.993	3.277	0.525	1245	990.3
720.007	64.00124	2200	186.8	-0.781	2.344	0.989	0.993	3.261	0.64	1218	980.2
730.007	65.24397	2282	185	-0.781	3.125	0.992	0.993	3.276	0.605	1228	970.9
740.008	64.6226	2238	185	-1.563	3.125	0.99	0.993	3.259	0.565	1233	965.8
750.007	64.6226	2248	186.8	-2.344	3.125	0.991	0.993	3.272	0.565	1233	961.7
760.007	64.00124	2157	186.8	-1.563	2.344	0.994	0.993	3.302	0.565	1232	958.6
770.007	63.37986	2223	186.8	-1.563	3.125	0.989	0.993	3.264	0.545	1231	955.2
780.007	64.00124	2170	186.8	-1.563	2.344	0.992	0.993	3.282	0.545	1231	952.9
790.007	64.6226	2586	186.8	-1.563	3.906	0.992	0.993	3.258	0.485	1235	950.4

800.007	65.24397	2219	186.8	-1.563	2.344	0.992	0.993	3.285	0.545	1239	951.3
810.008	64.6226	2163	186.8	-1.563	2.344	0.992	0.993	3.28	0.545	1237	951.3
820.008	64.6226	2118	186.8	-0.781	2.344	0.993	0.993	3.292	0.565	1225	949.3
830.007	63.37986	2306	185	-1.563	3.125	0.996	0.993	3.311	0.585	1210	943.9
840.007	63.37986	2230	186.8	-1.563	2.344	0.986	0.993	3.238	0.565	1223	941.2
850.007	63.37986	2104	186.8	-1.563	2.344	0.991	0.993	3.285	0.565	1217	939.6
860.009	63.37986	2204	186.8	-0.781	2.344	0.989	0.993	3.265	0.525	1216	936.9
870.01	63.37986	2316	186.8	-1.563	3.125	0.996	0.993	3.296	0.505	1232	937
880.009	63.37986	2165	186.8	-1.563	2.344	0.993	0.993	3.299	0.565	1232	939.4
890.009	63.37986	2047	186.8	-1.563	1.563	0.994	0.993	3.296	0.565	1227	940.1
900.009	63.37986	2139	186.8	-0.781	2.344	0.988	0.993	3.253	0.545	1219	938.3
910.009	63.37986	1377	186.8	0.781	0	0.991	0.993	3.281	0.545	1189	934
920.009	63.37986	1359	186.8	1.563	0	1	0.994	3.325	0.545	1145	922.1
930.009	63.37986	1368	185	0.781	0	0.993	0.994	3.293	0.565	1107	906.8
940.009	63.37986	2075	183.2	-2.344	2.344	0.993	0.993	3.296	0.7	1111	893.7
950.009	63.37986	2597	185	-1.563	3.906	0.997	0.993	3.299	0.585	1162	889.2
960.009	63.37986	2698	185	-1.563	3.906	0.993	0.993	3.277	0.485	1226	900.5
970.009	63.37986	2547	186.8	-2.344	3.906	0.997	0.993	3.318	0.545	1268	923.7
980.009	61.51575	915.5	186.8	0	-0.781	1.021	0.999	3.525	0.525	1256	941
990.009	54.68066	989.8	186.8	0	-0.781	1.232	0.999	4.997	0.015	1214	947.1
1000.009	38.52501	353.8	183.2	0	-0.781	0.821	0.727	1.827	0.075	1178	945.3
1010.009	19.26251	0	183.2	0	-0.781	0.856	0.999	2.239	0.075	1160	940.5
1020.011	14.29154	0	186.8	0	-0.781	0.933	0.999	2.875	0.135	1142	935.6
1030.009	20.50525	1579	185	-0.781	0.781	1.001	0.993	3.348	0.8	1137	927.5
1040.009	29.82582	1370	185	0.781	0	0.992	0.993	3.259	0.485	1145	919.4
1050.009	11.18468	0	185	0	-0.781	0.955	0.999	3.061	0.23	1127	910.9
1060.009	19.88388	1965	190.4	-1.563	2.344	0.995	0.993	3.322	0.855	1127	904.3
1070.009	31.68993	1636	186.8	0.781	0.781	0.973	0.993	3.157	0.425	1144	900.7
1080.01	31.68993	0	186.8	0	-0.781	0.978	0.999	3.199	0.21	1124	894.7
1090.011	34.17542	1409	186.8	-3.125	0	1.013	0.993	3.429	0.855	1115	888.8
1100.01	36.6609	1099	185	-2.344	-0.781	0.993	0.999	3.298	0.82	1096	879.4
1110.011	22.99073	0	186.8	0	-0.781	0.995	0.999	3.296	0.68	1080	871.7
1120.01	9.941939	985	186.8	0	-0.781	1.232	0.746	4.364	0.41	1066	865
1130.01	24.23348	114	185	0	-0.781	0.989	0.999	3.265	0.835	1075	860
1140.01	26.71896	0	186.8	0	-0.781	0.88	0.999	2.457	0.855	1062	853.9
1150.01	21.12662	0	186.8	0	-0.781	0.903	0.999	2.662	0.835	1048	848.7
1160.012	3.728227	0	186.8	0	-0.781	0.927	0.999	2.838	0.835	1036	843.8
1170.01	0	0	188.6	0	-0.781	0.941	0.999	2.944	0.82	1025	840
1180.01	0	0	190.4	0	-0.781	0.95	0.999	3.037	0.8	1013	836.4
1190.012	1.864114	0	190.4	0	-0.781	0.958	0.999	3.081	0.8	1003	833.4
1200.011	16.15565	1971	194	-0.781	2.344	0.987	0.993	3.271	0.82	1012	829.8
1210.01	9.320568	0	188.6	0	-0.781	0.927	0.999	2.832	0.64	1009	827.2
1220.011	0	0	190.4	0	-0.781	0.942	0.999	2.954	0.445	999.1	824.7
1230.012	0	0	190.4	0	-0.781	0.954	0.999	3.054	0.29	988.9	822
1240.011	0	0	190.4	0	-0.781	0.963	0.999	3.117	0.21	977.7	818.4
1250.011	0	0	190.4	0	-0.781	0.971	0.999	3.16	0.195	966.4	815
1260.011	0	0	190.4	0	-0.781	0.976	0.999	3.188	0.175	956.8	811.8
1270.011	0	0	190.4	0	-0.781	0.98	0.999	3.213	0.175	946.2	808.2

1280.011	0	0	190.4	0	-0.781	0.983	0.999	3.23	0.175	936.7	805.1
1290.014	0	0	190.4	0	-0.781	0.985	0.999	3.242	0.175	926.2	801.5
1300.012	0	0	190.4	0	-0.781	0.987	0.999	3.255	0.175	916.7	798.4
1310.012	0	0	190.4	0	-0.781	0.988	0.999	3.26	0.175	906.6	794.8
1320.011	10.56331	1718	190.4	1.563	1.563	1.002	0.993	3.322	0.78	909.5	791.8
1330.011	25.47622	2377	186.8	-0.781	3.125	0.985	0.993	3.249	0.585	971.2	790
1340.011	13.04879	0	188.6	0	-0.781	0.909	0.999	2.711	0.895	987.8	795.4
1350.011	0	0	190.4	0	-0.781	0.932	0.999	2.87	0.875	977.7	796.5
1360.011	9.320568	114	194	0	-0.781	0.927	0.999	2.837	0.895	966.4	795.4
1370.012	9.320568	0	190.4	0	-0.781	0.928	0.999	2.842	0.895	956.3	792.7
1380.012	8.699197	260.8	190.4	0	-0.781	1.092	0.986	3.66	0.935	944.2	789.3
1390.012	0	0	190.4	0	-0.781	0.968	0.999	3.148	0.935	934.5	785.8
1400.012	0	0	190.4	0	-0.781	0.984	0.999	3.237	0.935	924.1	782.2